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**Education for Sustainable Development – How Are Portuguese Children Being  
Educated In Order To Become Responsible Consumers**

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## **Abstract**

This study aims to understand how Portuguese children are being taught about education for sustainable development in both formal and non-formal education: environmental contents in the Portuguese Curriculum for Basic Education, Eco-Schools Program – a program created by UNESCO for which schools from all levels can apply to – and other activities developed by NGOs and private companies in this same issue.

Results show that the Ministry of Education is still missing the true value of activities such as Eco-Schools and that Environmental Education is still overcoming Education for Sustainable Development in the activities carried by the stakeholders. Also, it was found that parents consider that they have changed behaviors towards a more environmental-friendly way of living due to their children.

**Keywords:** Education for Sustainable Development, formal and non-formal education, children, parents

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## **1. Introduction**

Environmental protection started to be a matter of concern among scholars, long time ago, along with the need of having the subject learned by society and embedded in community, for which the role of environmental education would have a critical role. It is essential that “citizenry be knowledgeable concerning their biophysical environment and associated problems, aware of how they can help to solve these problems, and motivated to work toward effective solutions” (Stapp et al., 1969: 30).

The first international document focusing on environmental problems and the impact of humankind on natural resources – Agenda 21 – was adopted in 1992 by United Nations (UN) at the UN Conference on Environment and Development held in Rio de Janeiro. Agenda 21 is a “comprehensive plan of action to be taken globally, nationally and locally by organizations of the United Nations System, Governments, and Major Groups in every area in which human impacts on the environment” (Agenda 21: cover). Since, each region has its own problems, it is important to conduct consultative processes with their populations in order to take action on the community’s problems and create a Local Agenda 21 (Agenda 21: section III: 28).

Agenda 21 was fully implemented only in 2002 at the World Summit on Sustainable Development held in Johannesburg in the same year (Agenda 21: cover). This delay of ten years indicates that this is not an easy topic to be discussed and effectively implemented in the society.

The topic about environment and sustainable development compromises, not only current generations, but also the future ones. Thus, it has to be addressed to everyone, with special attention given to youth. They are the future leaders of tomorrow and their

involvement on these issues is critical to the long-term success of Agenda 21 (Agenda 21, section III: 25.1 and section IV: Chapter 36.3).

Following the same reasoning, UN set 2005-2014 as the Decade of Education for Sustainable Development (DESD) which overall goal is to “integrate the principles, values, and practices of sustainable development into all aspects of education and learning” (UN DESD, 2005a: page 6).

## **2. Literature Review**

### **2.1. Features of an effective Education for Sustainable Development**

There are many articles, books, news and documents about environmental education (EE), but some scholars (Huckle, 1999; Kyburz-Graber, Hofer, & Wolfensberger, 2006; Padilla, 2001; Payne, 2006) argue that EE is too narrow, too focused on ecology and relies too much on natural sciences as a theoretical framework. Education for Sustainable Development (ESD), instead, opens the spectrum by adding the effects of human activity to the picture, such as social and economic demand as "the global environmental crisis cannot be separated from the global economic crisis and any analysis from the causes and possible solution to environmental problems should start from this fact" (Huckle, 1999: 36).

Sustainable development is a broad term that crosses all human, social and economic dimensions of living, by making sure that future generations will come to tell their stories too. Thus, ESD encompasses all the agents impacting on the environment and on the natural resources: from the person, as an individual, passing through the school each person attended, to that big automotive company producing the car the person is driving.

### **2.1.1. Interdisciplinary**

An effective teaching method of EDS at schools should be one that crosses not only the natural sciences, but also, geography, history, mathematics, languages and arts “Young children already receive instruction in, for example, the need for fruits and vegetables for growth and good health; in geography, history, or economics, learners might study the production, labor market, transportation, and retailing of apples” (Payne, 2006). Thus, curricula should be reviewed to ensure a multidisciplinary approach (Agenda 21, section IV: Chapter 36.3) and teachers should work with the Ministry of Education to make ESD a mandatory part of elementary and secondary education, and with textbook committees to introduce the topic of sustainability into textbooks (UN DESD, 2005b: page 34).

### **2.1.2. Practice and local approach – humanizing environmentalism**

The curriculum is still too focused on the explanation of the environmental problems and the facts about sustainability (Huckle, 1999) and too less in the everyday lives and experiences of the learners and teachers (Payne, 2006; Weston, 1996).

In addition, the speech is too negative and too centered on endangered species. Instead, the contents taught have to follow an anthropocentric perspective by showing how “going green” can benefit health and by making children feel empowered in the resolution of environmental problems (Strife, 2010).

Along with a more practical curriculum, a local approach to the surrounding community also has to come up. ESD has to be highly contextual, depending on teachers’ and students’ previous experiences on their local environments: the real-life situations in which people are involved, rather than the general environmental topics such as energy, water and air (Kyburz-Graber, Hofer, & Wolfensberger, 2006; Strife, 2010). Action-

based learning models should be introduced so that students and teachers can work on projects that are relevant and important to their communities' future well-being (UN DESD, 2005b: page 34).

### **2.1.3. Non-formal education**

Formal and non-formal education must be combined in order to increase civil capacity. A truly education for sustainable development requires learning from both perspectives – theoretical and practical. Thus, practical activities carried outside the classroom are extremely important for children to apply the contents learned in the classroom. Therefore, schools should work closely with non-governmental organizations, nature centers and governmental institutions, for example (UN DESD, 2005a; Agenda 21, section III: Chapter 25) .

## **2.2. Portugal - the Formal Education Curricula and the role of other entities in the promotion of ESD**

In Portugal, Environmental Education started to be a matter of concern about 35 years ago when migrations to the coastline started to have a direct and worrying impact on environment (Schmidt, 2010). But how does the Portuguese Curricula address this issue among children?

### **2.2.1. Is the Portuguese Curriculum “ESD-friendly”?**

The current formal education curriculum<sup>1</sup> for both primary and elementary school levels (comprising the first 9 years of education in Portugal) aims, in terms of citizenship, to (1) contribute to the construction of the pupils' individual and social identity, (2) promote a critical, responsible, solidarity, and free participation in society, and (3)

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<sup>1</sup> The National Curriculum for Basic Education can be accessed at [http://sitio.dgide.min-edu.pt/recursos/Lists/Repositrio%20Recursos2/Attachments/84/Curriculo\\_Nacional.pdf](http://sitio.dgide.min-edu.pt/recursos/Lists/Repositrio%20Recursos2/Attachments/84/Curriculo_Nacional.pdf)



construct an ecological consciousness towards the conservation of both natural and cultural heritage. An extensive reading of this document shows that:

- Subjects such as Geography, History, Natural Sciences and Technologic Education include topics about the environment and the impact of human activity through history. However, such contents are mostly addressed in Natural Sciences.
- Contents are restricted to the subject they refer to. It is hard to find interdisciplinary in the contents to be taught among the different subjects;
- Sustainable development is referred only in Geography and Natural Sciences; and environmental education is only referred in Geography.
- Although ESD is implicit in the document as part of Education for Citizenship (*Formação Cívica*)<sup>2</sup> there is no explicit reference in having it as one of the priorities.

Between the years 2006 and 2008, representatives of private and public Portuguese organizations participated in several debates about the importance of Education for Citizenship (Forum of Education for Citizenship Report, 2008). Regarding EDS, it was assured that this topic has to address not only environmental issues on its own, but also the relationship between environment and the impact of human development on it.

In addition, children have to be educated in how to become responsible consumers – they have to learn how to make critical choices that will contribute to a higher individual dignity and how to respect the environment. However, the Portuguese Ministry of Education did not incorporate these considerations into the Curriculum yet.

Another non-disciplinary subject important for EE and ESD is Project Area or *Área de Projecto*, where pupils can develop practical projects, for example, by using recycled materials. Portuguese Ministry of Education announced its intention to withdraw this

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<sup>2</sup> Education for Citizenship or *Formação Cívica* is a non-disciplinary subject, meaning that pupils just have to attend classes. This subject is not included in the National Curriculum for Basic Education.

subject from the curricula in high school and reduce its weekly hours in elementary school. These actions are not regarded as beneficial by all stakeholders, even among the entities linked to Education, as the National Council for Education<sup>3</sup>, since it will decrease the opportunities to creativity, open discussions and practical projects developed by pupils. This Council also advises the Portuguese Ministry of Education to revise the National Curriculum for Basic Education and improve the contribution of non-formal education in this matter, in order to have a clearer linkage with United Nations resolutions (Diário da República, 2009a; 2011a).

### **2.2.2 Non-formal Education and Eco-Schools Program**

Having Agenda 21 and DESD as a framework, UNESCO has been launching several initiatives to promote ESD. One of them is the Eco-Schools Program<sup>4</sup> (ESP). It was implemented by the Foundation for Environmental Education (FEE)<sup>5</sup> in 1994, and it started in 1996 in Portugal coordinated by ABAE<sup>6</sup>. Nowadays, ESP is in about 1253 Portuguese schools<sup>7</sup>, from the 6587 schools with primary, elementary and high school studies (Education in Numbers, 2010), which gives 19% of penetration of ESP in schools in Portugal.

ESP is targeted to elementary schools but it can be implemented on any other grade. The program is based on the elements of an environmental management program, with a wide range of stakeholders involved, but pupils are the ones playing the most important role<sup>8</sup>.

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<sup>3</sup> Conselho Nacional de Educação at <http://www.cnedu.pt/index.php?lang=pt>

<sup>4</sup> More information on Eco-Schools Program in Portugal <http://www.abae.pt/programa/EE/inicio.php>

<sup>5</sup> FEE is a non-governmental and non-profit organization aiming to promote sustainable development through environmental education <http://www.fee.org/>

<sup>6</sup> Associação Bandeira Azul da Europa or European Blue Flag Association is an Environmental non-profit organization aimed to promote ESD and good practices towards environment, as representative of FEE in Portugal

<sup>7</sup> Presentation of 2009/2010 Eco-Schools Program in Portugal can be accessed on: [http://www.abae.pt/programa/EE/seminario/2010/docs/comunicacao\\_01\\_EcoEscolas\\_2010.pdf](http://www.abae.pt/programa/EE/seminario/2010/docs/comunicacao_01_EcoEscolas_2010.pdf)

<sup>8</sup> Detailed information about Eco-Schools methodology can be accessed on <http://www.eco-schools.org/index.php>

ESP is independent from Portuguese Government and Portuguese Ministry of Education. Though, ESP National Commission has representatives from Regional Directorates of Education<sup>9</sup>, which evaluate the performance of ESP in each school, and from some governmental institutes linked to the protection of nature and water conservation (*Agência Portuguesa do Ambiente, Autoridade Florestal Nacional, Instituto da Água, Agência para a Energia*). Each school should also have a committee constituted by the relevant stakeholders in the community. As any NGOs programs, ESP relies on sponsorships from both public and private sector: municipalities and Unilever (the official sponsor 2009/10), Galp Energia Foundation, just to name a few. On the other hand, the Ministries of Education and Environment also promote projects and contests on environmental issues in partnership with some governmental institutions, some of them that partner with ABAE in Eco-Schools Program. Most of these projects have UNESCO and UN resolutions as an umbrella – following Agenda 21 –, 2011 was promoted by UN as the International Year of Forests (UN Resolution No 61/193) – and the Ministry of Education launched the contest Discover the Forest (*Descobrir a Floresta*), where pupils and teachers are challenged to study the forest ecosystem and promote the knowledge, preservation and management of forests in a sustainable way.

### **2.2.2. The role of Environmental NGOs in ESD**

By the end of 2010, there were 124 Environmental NGOs in Portugal (Diário da República, 2011b) at a national, regional or local level, all of them promoting “the protection of the environment or the natural heritage, as well as the conservation of

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<sup>9</sup> Direcções Regionais de Educação

nature”<sup>10</sup>. Such organizations promote several projects and actions towards the protection of nature and environment, and some of them have a specific department of ESD. In the words of Quercus<sup>11</sup> “The most effective way of promoting environmental education is that one that has sustainability as a basis and the one targeted to the younger population. Working these issues among the youngsters is essential to change attitudes and behaviors and to bring an effective transformation to the current way of thinking”. At the end, these children and adolescents are expected to influence their peers, family and educators to take more responsible actions and habits as guarantee for a sustainable development.

### **2.2.3. EDS in the business world**

Companies which business has a highly impact on environment – Oil, Energy, Transportation, Consumer Goods – are taking several steps on the way to environmental protection and the promotion of eco-friendly behaviors among school-children. Their actions are based on partnerships with NGOs, municipalities and schools where, together, they develop projects on sustainable mobility, consumption and promotion of biodiversity.

Companies such as Unilever and Galp Energia Foundation (Portuguese Oil Company) are sponsoring Eco-schools program; In 2010 EDP (Portuguese Energy Company), in partnership with the Portuguese Ministry of Education, distributed 500,000 low-consumption bulbs in high schools; State owned Train Company (CP – Comboios de Portugal) in partnership with an Environmental NGO created the project Train of the

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<sup>10</sup> To see the full document, please access

[http://www.pgdlisboa.pt/pgdl/leis/lei\\_mostra\\_articulado.php?nid=755&tabela=leis](http://www.pgdlisboa.pt/pgdl/leis/lei_mostra_articulado.php?nid=755&tabela=leis)

<sup>11</sup> Quercus – National Association for the Protection of Nature is one of the most known Portuguese Environmental NGOs. It was established in 1985.

Environment (*Comboio do Ambiente*) in which pupils can learn more about environment while they travel in a regular train.

### **3. Market Research**

#### **3.1. Objectives**

The aim of this study is to assess how effectively children are being taught about education for sustainable development in both formal and non-formal education. Thus, specific objectives are as follows:

1. Evaluate the commitment of the stakeholders to Agenda 21 and 2004-15 as Decade of Education for Sustainable Development;
2. Evaluate the effectiveness of the stakeholders' actions and projects for EE/EDS;
3. Evaluate if EE is still overcoming ESD;
4. Evaluate if children are influencing their parents in ESD;
5. Draw recommendations for a more effective learning on ESD.

#### **3.2. Methodology**

The research is of an exploratory nature, since this study aims to give a big picture of ESD in Portugal. Exploratory research is the best to provide insights and to the understanding of the nature of marketing phenomena that are inherently difficult to measure (Malhotra, 2007).

#### **3.3. Sample**

Participants of this study were the stakeholders on Environmental Education and Education for Sustainable Development:

- Coordinating Board of Eco-Schools Program in Portugal;
- Teachers of elementary schools with and without Eco-Schools Program;
- Environmental NGOs' responsible for ESD and EE activities;

- Public Institution linked to environment;
- Private companies supporting projects and actions on ESD and EE;

And, to study the impact on their families of children knowledge about environmental/sustainable development:

- Parents of children attending schools with and without Eco-Schools Program.

### **3.4. Methods**

Qualitative research – in-depth interviews of the various stakeholders (appendix I) – were conducted, since according to Malhotra (2007), interviews can present detailed descriptions that cannot be measured in a quantifiable manner, which is important in some conditions:

- Phenomena complexity: the nature of what participants are expected to describe is difficult to capture with structured questions.
- Holistic dimension: to gain a comprehensive and complete picture of the whole context in which the phenomena of interest occur. It is an attempt to describe and understand as much as possible about the whole situation of interest.

This method will be applied to all the stakeholders previously presented, with the exception of parents. For these ones, quantitative research was applied – written questionnaires with structured questions (appendix II). The effectiveness of Eco-Schools Program will be tested in comparison to schools that do not have the Program. The minimum number of participants is sixty, since it is desirable to have at least thirty participants for each sub-group. This way, quantitative and qualitative researches complement each other.

### 3.5. Ethical Responsibility

Respondent anonymity is a critical issue when doing market research (Malhotra, 2007). In-depth interviews will be carried with critical actors in EE and ESD but only a list of schools and institutions will be disclosed (appendix III). Also, since the interviewer is expected to encourage participants to reveal the most possible amount of information, this brings with it a responsibility to ensure that safeguards are in place, to deter coercion and avoid the potential danger of abuse of power and control over participants during the interview (Malhotra, 2007).

Regarding questionnaires, respondents' personal information is not important for the validation of the study. That way, the researcher informed parents in advance that personal information would not be disclosed.

### 3.6. Results

#### 3.6.1. Commitment to Agenda 21 and Decade of Education for Sustainable Development (DESD)

ESP teachers and NGOs have Agenda 21 and DESD as **guidelines for the main issues** to be approached, because much of the developed work aims to address the **local issues** (*Yes, we see Agenda 21 as a guideline, but the Local Agenda 21: teacher, ESP, School*). However, the **speech has to be adapted to children** (*I never felt comfortable to talk about Agenda 21 to my pupils...I prefer the European Letter of Water, for example: Teacher, ESP, School 3*). *Many of our projects are based on the guidelines of Agenda 21 – Think globally, act locally (Local Agenda 21); we created a discussion platform for NGOs in order to come up with strategies for DESD: NGO 1.*

Teachers from schools without ESP do not develop projects having Agenda 21 or DESD as basis, since these documents are not part of the contents in the National Curriculum for Basic Education.

Regarding private sector, company 1 has the topics of Agenda 21 as part of their corporate strategy.

### **3.6.2. The perceived role of Portuguese Ministries of Education and Environment.**

Most of the Teachers limited the role of the Ministry of Education to **the development of National Curriculum** and to providing teachers with the necessary conditions to **develop practical projects** beyond what is taught in the classroom. However, teachers considered these projects hard to implement, since they require extra hours, which are not paid. Besides, the Ministry intends to **reduce the hours of the non-disciplinary courses** of Project Area and Education for Citizenship which are of extremely importance for an effective teaching of ESD (*I don't want to imagine how this is going to be after the curriculum reform...: NGO 2*).

In NGOs opinion, the Ministry of Environment has been decreasing the relevance given to the work of these organizations, since the financial support provided is declining year after year.

### **3.6.3. EE/EDS contents in the Portuguese Curriculum for Basic Education**

All teachers consider that such contents are (1) mostly addressed in **Natural Sciences**, even though with some references in Geography and History (*contents are focused on biodiversity: Teacher, no ESP, school 2*); (2) **fragmented** (*We talk about that in the first term, then a little bit in the second term, but there should be a link between the issues: Teacher, ESP, Schools 1 and 3*); (3) **theoretical** (*...is too theoretical, so we have the need to complement with practical projects: Teacher, no ESP, School 2; The curriculum*



*is still too focused on biodiversity and on the 3R's<sup>12</sup>; there's no coordination between theory and practice: Teacher, ESP, School 3), which results on the **study of a distant reality**, rather than a evaluation of the local issues where the pupils can actually take action on – local approach (Pupils, teachers, and parents are the ones who have to decide the topics to be addressed on their own community: Public Institution 1); and (4) **there should be a conjoint work** between the **Ministry of Education and the Ministry of Environment** (It's a work that has to start from above, both Ministries have to hold their hands together: NGO 1).*

Here, the problem regarding Project Area and Education for Citizenship was referred again (*There will be fewer opportunities to approach EE and ESD at schools: ESP Coordination Board*). Yet, much part of the **work is developed by teachers** who come up with projects for their pupils and for the school – beyond what is taught in the classroom – even though they are not rewarded for that (*those teachers are extremely motivated in ESD and sometimes they manage to involve the whole school in the projects...they do the impossible: NGO 2*).

#### **3.6.4. The tone of the speech in EE/ESD (negative/positive)**

The tone has been considered to be positive in most of the interviews *thanks to the development of environmental psychology and sociology, the message is becoming more positive and appeals to action taking and cooperation: Public Institution 1*. The importance of the speech relies on **the humanization of the problems** as *we are active actors in the environment and we have to show pupils how we can minimize the negative impact of our way of living: NGO 2*.

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<sup>12</sup> Reduce, Reuse and Recycle

### 3.6.5. Projects and activities in EE/ESD

A clear advantage of having Eco-Schools Program implemented is notorious, since (1) a high number of projects is developed, as a **complement for the too theoretical curriculum**; (2) It is a first step towards **changing attitudes**, because ESP is targeted to children (3) there is a clear **local approach**, since one of the requirements is to have a protocol with the municipality, so *these projects can be able to go beyond the school's gate*, Teacher, ESP, School 1, (4) and being in a **network** is important to share experiences and best practices.

The two teachers from schools without ESP mentioned work projects developed inside the classroom, focusing on specific contents referred in the curriculum and projects proposed by European Commission, UNESCO or the Portuguese Ministry of Education. The focus, however, is again, on **biodiversity, 3R's** and the **global environmental problems**; *In terms of knowledge in this area, there is no difference between schools with ESP and schools without it. However, we only can expect a changing in behaviors when we learn by "doing", and that's the role of Eco-Schools: ESP Coordination Board.*

From NGOs perspective, one of the biggest problems is that some **schools only contact NGOs to organize seminars** (*we go there to give a speech about endangered species and that's all. It's not enough. Teachers have to develop projects about the topic continuously; everyone is aware of environmental problems but there's still a long way to go, because we need to go from theory to action: NGO 1).*

Another problem for an effective ESD regards the need of the **school staff being committed to the matter** (*Our staff is still not awakened for recycling and sometimes they just don't do it: Teacher, no ESP, School 2).* On the other hand *we train our staff in*

*this area, because if they see a pupil throwing a paper to the floor they have to be able to alert him, otherwise the child will think that what he learns in the classroom doesn't apply anywhere else:* Teacher, ESP, School 1.

Organizations working on **non-formal education** field have their activities mostly related to the **preservation of natural resources** (*we promote education and training for the protection of the environment and biodiversity:* Public Institution 1). NGOs develop activities and workshops at their headquarters, so that pupils have the opportunity to learn on the field. Private companies, on the other hand, sponsor activities from NGOs or ESP (Company 1 and 2) and may come up with projects on their own to be implemented at schools (Company 2).

### **3.6.6. The role of partnerships**

Partnerships are **critical for the success of the developed projects**, when the goal is to go beyond teaching. Schools that are in this stage, partner with **municipalities, public and charity institutions** and **private companies** (*It is very important to have broader partnerships:* Teacher, ESP, school 3). At local level, ESP may rely on partnerships based on the exchange of goods (*the more kitchen oil pupils bring, the more number of equipment our partner will provide to school:* Teacher, ESP, school 1).

**NGOs** also partner with companies, in order to perform workshops about environmental education to employees and their families, NGO 2. *Partnerships are a priority for us because they are essential for ESD and because we want to see a greater involvement from society:* Public Institution 1; *we partner with scouts to alert communities for the surrounding problems:* NGO 1.

### 3.6.7. Commitment of stakeholders in the implementation and management of ESP

**Motivation** is the key for any project to be successful (*we have to put our soul in this kind of projects: Teacher, ESP, School 3; I see some Teachers doing the impossible to get the school staff and the community involved: NGO 2). The example has to come from above: the Government and the Ministries: NGO 1 and Teachers; and at the same time we have to work at the bottom, on society, first of all we need a change in our values: NGO 2 and Teachers.*

**ESP coordinator Teachers** are the key stakeholders, but **municipalities** are also critical to the success of the program (*the Municipality was fundamental in my first year as ESP Coordinator; it motivated me to continue: Teacher, ESP, School 3*), as well as the **school staff** and the **parents** (*parents are always available to help us and to participate in the activities: Teacher, ESP, School 3*).

### 3.6.8. Main obstacles in the implementation of Eco-Schools Program

The main obstacles regarding the implementation of ESP, at a local level, have to do with the **Direction Board** of some schools, which (1) perceive this program as a **minor project** for children education, (2) have a tendency be **resistant to changing** and innovation and (3) have difficulties to understand that the **whole school and the surrounding community have to be involved**. On the other hand, there is **too much bureaucracy** – to manage ESP is time consuming. Thus, teachers and ESP Coordination Board consider that *the Ministry of Education has to recognize the true value of programs like this one. They could, for example, minimize the number of teaching hours for ESP coordinators: Teacher, ESP, school 1.*

### 3.6.9. Three vectors: environment, economy, society

Environmental Education (EE) is still overcoming Education for Sustainable Development (ESD) as the curriculum contents and the projects developed by teachers are (1) too focused on biodiversity and the 3R's, (2) are not that targeted to the problems the community faces. Thus, there is **no integration with the other two spheres**: economic and social, because *sustainability is not only about environment*: Teacher, ESP, School 1. Even among ESP activities, a teacher considers that *the topics addressed are always the same and there are schools that see this as a way just to show off. ESP Coordination Board should show that projects like this one are fundamental to human development in an ethical way; they are not just for fun*: Teacher, ESP, School 3. Even among the private sector, companies are waiting for a changing in values and attitudes: *in the long term consumers will require only sustainable products; but now buying “green” is still perceived as a luxury for which consumers have to pay more*: company 1.

### 3.6.10. Re-socialization of adults towards environmental-friendly practices

This aspect was assessed with the questionnaires that were applied to parents. Environment is a sensitive topic in which people might provide answers they believe will be acceptable within the social norms. In order to overcome the social desirability bias, detailed questions about the discussion of environmental and sustainable development topics were evaluated through a four point scale (from “really frequently” to “never”). Actually, respondents provided the idea that **environmental issues are embedded in families’ daily discussions**, since 94.3% of the respondents are used to discuss environmental topics frequently. Although, when asked about specific topics, it was revealed that environmental issues are still considered more important than the ones

related to sustainable development. In fact, the most discussed topics between parents and their children are the ones linked to environmental education and the ones taught at school: “saving energy/water” (95.2%) “protection of the environment” (89.2%) and “recycling” (81.9%). Contrary, issues like “Buy national/local products” and “Buy unpackaged products” which are **related to sustainable development**, are the ones **least discussed** at home (63.8% and 60.2% not discussing these issues, respectively). Though, “Buy national/local products” is slightly more discussed among families whose children attend ESP schools than children not attending schools with ESP (34.9% and 28.9%, respectively).

There are more children being “the first one to bring the environmental topic to discussion” from schools with ESP implemented (63.3%). Nevertheless, overall parents considered themselves as the first ones to address the topics (56.6%) when compared to “child” (36.2%) or “spouse” (7.2%).

The majority of the parents believe that **school has an important role in “Teaching about environmental protection” (98.9%) and “sustainable consumption” (90.9%)**. Half of the respondents said that their children enroll in extracurricular environmental activities (48.7%), being that number slightly higher on children attending schools with ESP implemented (26.1%).

71.6% of **parents consider they have changed positively their behavior towards environment**, from which 39.8% have their children attending schools with ESP and the remaining 31.8% have their children attending schools without ESP implemented.

#### 4. Conclusions and Discussion

This study shows that programs such as Eco-Schools are extremely important to an effective socialization of children towards sustainable development and as future responsible consumers who adopt ethical habits towards environmental issues:

- ESP can complement the National Curriculum for Basic Education, which is too theoretical, too fragmented and too confined to the perspective from Natural Sciences;
- ESP is based on practice, which is a learning method much more effective for sustainable development than the one based only on theoretical classes;
- Parents of children attending schools with ESP are more willing to change behaviors than parents of children who do not have the program at their schools;

However, there is room to improve ESP:

- The projects proposed are always addressing the same topics such as biodiversity and the 3R's – The Coordination Board of ESP should enlarge the spectrum from the environmental perspective to the sustainable one. For instance, preferring national or unpackaged products are sustainable daily habits easy to adopt;
- It has to promote the integration between environment, society and economy – the three spheres of sustainable development;
- The target should be enlarged: from primary schools to universities;
- All the teachers interviewed for this research have their background on Natural Sciences – once again, this shows that a holistic approach to ESD is needed.

On the other hand, greater recognition to the Program should be given:

- The Portuguese Ministries of Education and Environment should work together and create directives to promote ESP and turn it as a best practice in formal education –

make the school's Direction Boards recognize that ESD is not a minor type of education.

- The Ministry of Education should go back on their decision of decreasing the teaching hours of the non-disciplinary courses. Project Area, for instance, is extremely important for ESP and ESD. In schools without ESP, Area Project is the only place where pupils can develop practical projects, expand their creativity and discuss points of view with their classmates.
- The Ministry of Education should decrease the required teaching hours for professors in charge of ESD activities – which is already happening for extra-curricular activities such as School Sport (*Desporto Escolar*).
- It is also important to educate not only the children, but also the adults who are educating them, such as the school staff that may not care about recycling despite it is being taught in classrooms - It is fundamental to bring all the community into this matter.

In addition, there are opportunities to be considered:

- NGOs are experts in EE/ESD and schools should look for partnerships with them. NGOs are highly interested in develop more activities and projects with pupils than just the organization of seminars and study trips;
- Municipalities have their Agenda 21 which is another chance for schools to develop a conjoint work aimed to address the local issues;
- Companies are developing their corporate strategies on the basis of social and environmental responsibility. Most of them are creating contests and activities targeting school children;



- The world crisis is making people change behaviors: save energy and water, prefer public transports, create their own kitchen garden. Even though the main reason for these behaviors is more related to money savings than it is to sustainable development or environmental protection, these ethical attitudes and behaviors are shaping new consumption patterns. This is an opportunity for companies to start having a sustainable portfolio, rather than just a few “green products” targeted to consumers with higher incomes – the ones that, at the moment, can “afford sustainability”.

## **5. Limitations and Future Research**

Since it was proved that ESP is a good example as a complement for formal education, when it regards ESD, future research should focus on the actions to be taken by the Ministries of Education and Environment in order to promote the integration between formal and non formal education, so that the recommendations drawn by Agenda 21 can be put into practice.

In addition, it is crucial to have the example coming from the top and, at the same time, working at the bottom – educating children and adults – to ensure that in the future we will have ethical behaviors towards environment as part of our cultural values and an effective public intervention in decision-making.

Moreover, ESD requires a closer look from different perspectives such as sociology, economics, psychology and history since it is such a complex topic. Also, due to time constraints it was only possible for the researcher to focus the research on elementary schools. Therefore, future researchers should study, for instance, ESD among all the school levels – from primary schools to university as this complex issue should accompany students throughout their studies.

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## 1. Appendices

### 1.1. Appendix I – Main topics asked to stakeholders: in-depth interviews

	ESP Coordination	Teachers ESP	Teachers no ESP	NGO	Public Sector	Companies	Parents
Commitment to Agenda 21 and Decade of Education for Sustainable Development	●	●	●	●	●	●	
The perceived role of Portuguese Ministries of Education and Environment in EE/ESD	●	●	●	●	●		
EE/EDS contents in Portuguese Curriculum for Basic Education	●	●	●	●			
The tone of the speech in EE/ESD (negative/positive)	●	●	●	●	●		
Three vectors: environment, economy, society	●	●	●	●			
Projects and activities in EE/ESD	●	●	●	●	●	●	
The role of partnerships	●	●	●	●		●	
Commitment of stakeholders in the implementation and management of Eco-Schools Program	●	●					
Main strengths of Eco-Schools Program	●	●					
Main obstacles in the implementation of Eco-Schools Program	●	●					
EE/EDS as part of corporate strategy						●	
Re-socialization of adults towards environmental-friendly practices							●

## 1.2. Appendix II – Questionnaire for parents



Joana Lavareda | Universidade Nova de Lisboa – Faculdade de Economia

### QUESTIONÁRIO

Exmo. Sr. Encarregado de Educação, sou aluna de mestrado em gestão da Universidade NOVA de Lisboa e estou a realizar a minha investigação na área de Educação Ambiental. Para tal gostaria que o(a) Sr(a) me respondesse a um breve questionário e o devolvesse à escola através do(a) seu filho(a).

Mais informo que os dados recolhidos serão analisados por mim e a sua confidencialidade é total, sendo apenas publicados os resultados gerais sem referência aos seus dados pessoais, nem referência à escola frequentada pelo seu educando(a). No final, uma cópia da minha tese será disponibilizada na escola para que todos a possam consultar.

#### 1. Género:

Masculino ☐

Feminino ☐

#### 2. Indique a sua zona de residência:

Sobral de Monte Agraço ☐

Arruda dos Vinhos ☐

Alverca ☐

Outra \_\_\_\_\_ ☐

#### 3. Indique as suas habilitações literárias:

Sem Estudos ☐

12º ano (Ensino secundário) ☐

4ºano (Ensino primário) ☐

Bacharelato/Licenciatura ☐

9º ano (Ensino básico) ☐

Pós-graduação ☐

#### 4. Costuma conversar com o seu filho(a) sobre temas ambientais?

Não ☐ (passe para a pergunta 7, por favor)

Sim ☐

(Continua na página seguinte)

**1. Assinale com que frequência o(a) Sr(a) e o seu filho(a) conversam sobre os seguintes temas:**

	Muito Frequentemente	Frequentemente	Raramente	Nunca
Protecção da natureza				
Reciclagem				
Poupança de energia/água				
Compra de não embalados sempre que possível (ex: fruta, vegetais, carne)				
Consumo de produtos locais e nacionais				
Outro (qual?) _____				

**2. Quem costuma ser o primeiro a começar a conversa sobre os temas ambientais?**

Eu ☐ O meu cônjuge ☐ O meu filho (a) ☐

**3. Numa escala de 1 a 4 (sendo 1 concordo totalmente e 4 discordo totalmente) avalie as seguintes afirmações:**

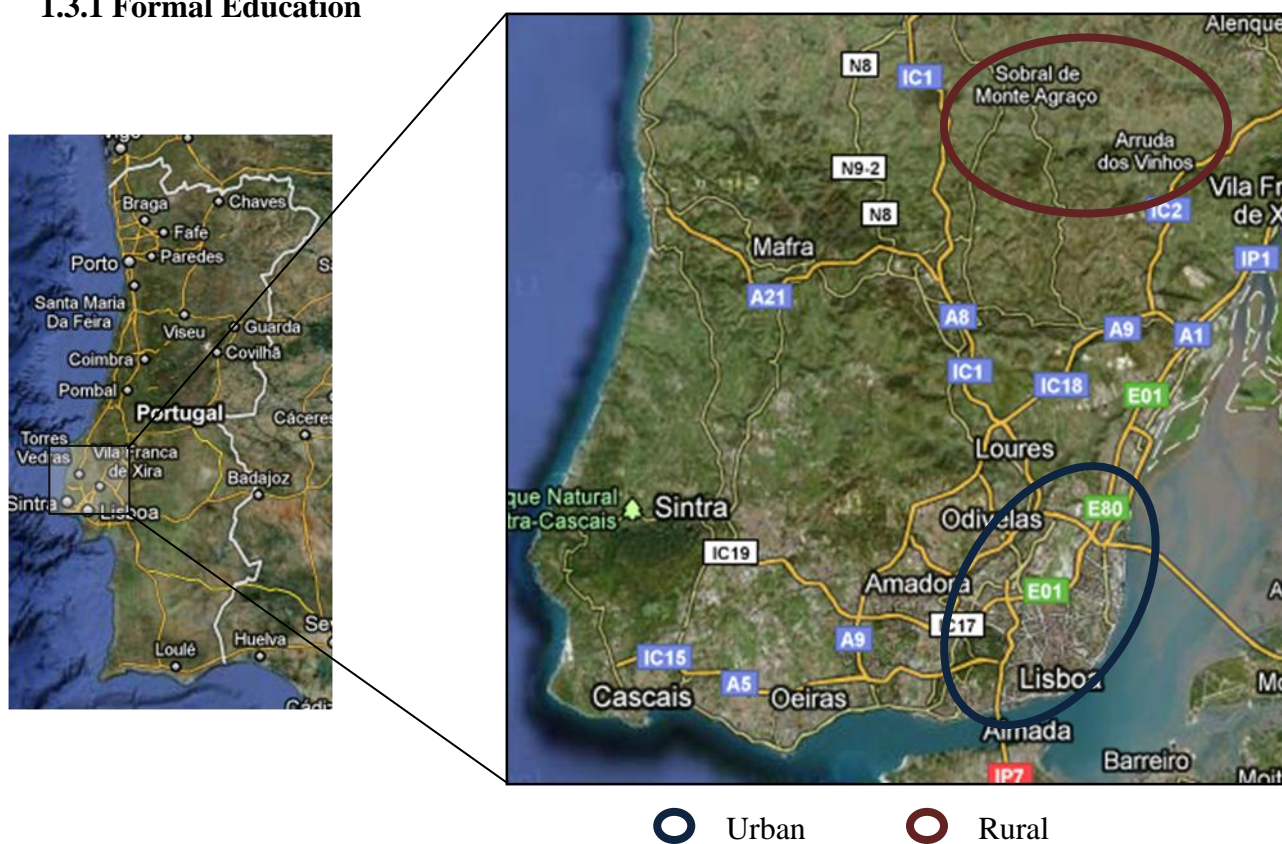
	1 - Concordo totalmente	2 - Concordo	3 -Discordo	4 - Discordo totalmente
A escola ensina o meu filho no sentido da protecção do ambiente.				
A escola ensina o meu filho no sentido de um consumo ambientalmente responsável.				
O meu filho participa em actividades extracurriculares ligadas ao ambiente.				
O meu filho partilha os conhecimentos adquiridos com o resto da família.				
Cá em casa alterámos comportamentos por insistência do meu filho (ex: fazer reciclagem; uso de lâmpadas de baixo consumo.				

**Obrigada pela sua colaboração!**

Joana Lavareda

### 1.3. Appendix III – Stakeholders

#### 1.3.1 Formal Education



School	ESP	Teacher of	Area
Nr 1	Yes	Natural Sciences	Urban
Nr 2	No	Natural Sciences	Rural
Nr 3	Yes	Natural Sciences	Rural
Nr 4	No	Natural Sciences	Urban

#### 1.3.2 Non-formal Education

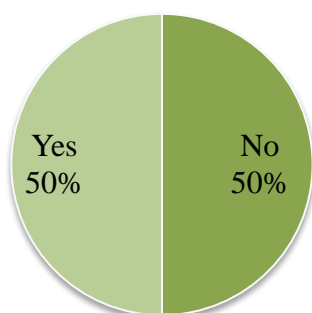
Institution	Field
NGO 1	Biodiversity
NGO 2	Biodiversity and promotion of ethical behaviors towards environment
ESP Portugal	National Coordination Board of Eco-Schools Program
Company 1	Consumer Goods
Company 2	Energy
Public	Ministry of Environment



#### 1.4. Appendix IV – Results from questionnaires

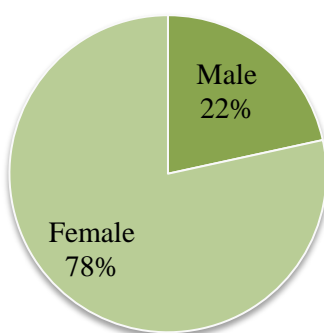
Questionnaires Delivered	Questionnaires Received back	Response rate
163	88	53.9%

##### ESP Implemented

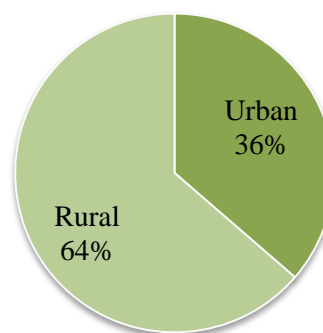


The total number of returned questionnaires was 88. 44 from parents whose children are attending schools with ESP implemented and 44 from parents whose children are attending schools without ESP implemented

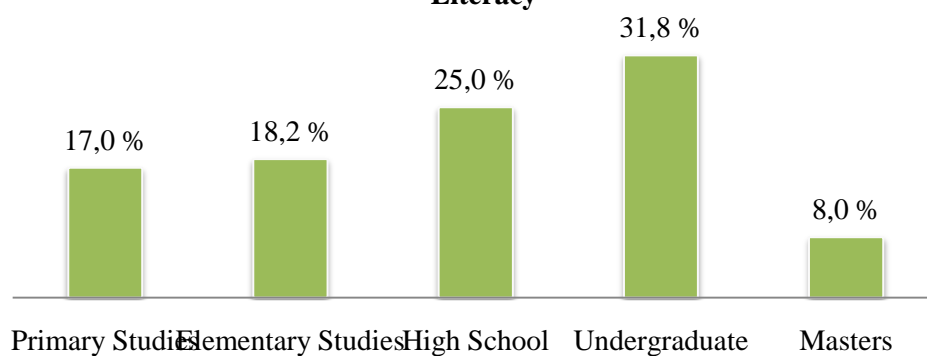
##### Gender



##### Place of Living



##### Literacy



ESP * Discussion of Environmental Topics - valid: 88; missing: 0				
		Environmental Topics		Total
		Yes	No	
ESP	Yes	41	3	44
	No	42	2	44
Total		83	5	88

ESP * Protection of Environment - valid: 88; missing: 0						
		Protection of Environment				Total
		Do not discuss environmental topics	Really Frequently	Frequently	Rarely	
ESP	Yes	3	4	33	4	44
	No	2	2	35	5	44
Total		5	6	68	9	88

ESP * Recycling - valid: 88; missing: 0						
		Recycling				Total
		Do not discuss environmental topics	Really Frequently	Frequently	Rarely	
ESP	Yes	3	13	23	5	44
	No	2	7	25	10	44
Total		5	20	48	15	88

ESP * Saving Water/Energy - valid: 88; missing: 0						
		Saving Water/Energy				Total
		Do not discuss environmental topics	Really Frequently	Frequently	Rarely	
ESP	Yes	3	20	17	4	44
	No	2	25	17	0	44
Total		5	45	34	4	88

ESP * Buy Unpackaged products - valid: 88; missing: 0							
		Unpackaged products					Total
		Do not discuss environmental topics	Really Frequently	Frequently	Rarely	Never	
ESP	Yes	3	9	15	13	4	44
	No	2	7	19	12	4	44
Total		5	16	34	25	8	88

ESP * Buy National/Local products - valid: 88; missing: 0							
		National/Local products					Total
		Do not discuss environmental topics	Really Frequently	Frequently	Rarely	Never	
ESP	Yes	3	9	20	8	4	44
	No	2	8	16	14	4	44
Total		5	17	36	22	8	88

ESP * Who Brings the Topic to discussion - valid: 88; missing: 0						
		Who Brings the Topic				Total
		Do not discuss environmental topics	Me	My Child	My Spouse	
ESP	Yes	3	18	19	4	44
	No	2	29	11	2	44
Total		5	47	30	6	88

ESP * School teaches about environmental protection - valid: 88; missing: 0					
		School teaches about environmental protection			Total
		Totally Agree	Agree	Do Not Agree	
ESP	Yes	19	25	0	44
	No	13	30	1	44
Total		32	55	1	88

ESP * School teaches about sustainable consumption - valid: 88; missing: 0					
		School teaches about sustainable consumption			Total
		Totally Agree	Agree	Do Not Agree	
ESP	Yes	14	27	3	44
	No	11	28	5	44
Total		25	55	8	88

ESP * Extra-curricular environmental activities - valid: 88; missing: 0						
		Extra-curricular environmental activities				Total
		Totally Agree	Agree	Do Not Agree	Totally Disagree	
ESP	Yes	5	18	17	4	44
	No	3	17	15	9	44
Total		8	35	32	13	88

<b>ESP * Sharing Knowledge w/ family - valid: 88; missing: 0</b>					
		<b>Sharing Knowledge w/ family</b>			<b>Total</b>
		Totally Agree	Agree	Do Not Agree	
<b>ESP</b>	Yes	10	31	3	44
	No	17	21	6	44
<b>Total</b>		27	52	9	88

<b>ESP * Changed Behavior because of Child - valid: 88; missing: 0</b>						
		<b>Changed Behavior because of Child</b>				<b>Total</b>
		Totally Agree	Agree	Do Not Agree	Totally Disagree	
<b>ESP</b>	Yes	10	25	7	2	44
	No	16	12	13	3	44
<b>Total</b>		26	37	20	5	88

-